1/2 028 UNCLASSIFIED PROCESSING DATE 20NOV70

TITLE--EFFECT OF VIBRATIONAL ROTATIONAL INTERACTIONS ON THE LINE INTENSITY OF THE 6.3 MU H SUB2 O BAND -U-

AUTHOR-(02)-[redacted]TCV, I.I., MAKUSHKIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 101-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WATER, LINE INTENSITY, VIBRATION EFFECT, PERTURBATION THEORY, MATHEMATIC ANALYSIS, CORIOLIS FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1258 STEP NO--UR/0139/70/013/003/0101/0107

CIRC ACCESSION NO--AP0124909

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124909

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE EFFECT OF VIBRATIONAL ROTATIONAL INTERACTIONS ON THE LINE INTENSITY OF THE 6.3 MU WATER BAND IS ANALYZED BY USING THE EARLIER DESCRIBED GENERAL METHOD BASED ON THE PERTURBATION THEORY (I. AND M., 1968). THE EQUATIONS DERIVED FOR CALCG. THE INTENSITIES OF THE LINES OF THE 6.3 MU WATER BAND TAKE INTO ACCOUNT THE RIGIDITY OF THE MOL., THE DELTA K EFFECT, AND THE CORIOLIS INTERACTION. THE EQUATIONS CONTAIN 3 PARAMETERS WHICH ARE DETD. FROM EXPTL. DATA ON THE LINE INTENSITIES. FACILITY: TOMSK. GOSUNIV., TOMSK, USSR.

UNCLASSIFIED

USSR

NAMAZOV, S. T., and IPPOLITOV, P. A.

"Study of Protein Metabolism in Animals Irradiated With Small Doses of Ionising Radiation by the Method of Methionine-S-35 Incorporation in Proteins of Structural Elements of Animal Tissue Cells"

Tr. Azerb. NII virusol., mikrobiol. i gigiyeny (Works of Azerbaydzhan Scientific Research Institute of Virology, Microbiology and Hygiene), 1966 (1970), 18, pp 179-183 (summary of Azerbaydzhani) (from RZh-Biologicheskaya Khimiya, No 8, 25 Apr 71, Abstract No 8F1303, summary)

Translation: It was shown that the specific activity of proteins of rat liver and small intestine increases with an increase in the total irradiation dose. Variation in the specific activity of kidney proteins is less pronounced. No changes were observed in the specific activity of spleen proteins after irradiation.

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USSR

ZHITOVA, Ye. I., IPPOLITOVA, L. A., MINEYEV, A. M., SMOLINA, N. N., and STREZH, N. P., Gor'kiy Medical Institute, Gor'kiy Oblast Sanitary Epidemiological Station, and Gor'kiy City Sanitary Epidemiological Station, Gor'kiy

"Diagnostic Significance of Lot Titers of the Complement Fixation Reaction With Some Antigens"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 72-75

Abstract: Sera of patients and healthy persons giving a positive reaction in the complement fixation test with ornithosis antigen also contained antibodies to R. prowazekii antigen in approximately 50% of cases. The relative frequency of ornithosis-R. prowazekii cross reactions increased with increasing titers of the R. prowazekii antigen at which a positive complement fixation reaction was obtained. To exclude diagnostic errors, repeated tests with both antigens should be carried out. Sera

USSR

ZHITOVA, Ye. I., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 72-75

that show positive complement fixation reactions with antigens of ornithosis, R. prowazekii, and Q-fever gave positive reactions with toxoplasmosis antigen (1:10 - 1:5) in more than 2/3 of cases.

USSR

UDC 546.791.4.221

DUNAYEVA, K. M., DUBROVIN, A. V., KOVAL'CHUK, V. Yu., and IPPOLITOVA, Ye. A.

"Study of the Oxidation Kinetics of Uranium Oxysulfide"

Leningrad, Radiokhimiya, Vol 15, No 6, 1973, pp 869-870

Abstract: The area of the specific surface of starting uranium oxysulfide sample has a definite effect on the oxidation rate constant indicating that the oxidation process takes place on active centers, the number of which increases with increasing specific surface. The apparent activation energy is almost independent of the specific surface. In respect to the oxygen pressure, it was found that above 0.206 atm the reaction is independent of the pressure. The oxidation process may be viewed as one being limited by the diffusion of oxygen through the layer of the reaction product.

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USSR

UDC 546.791.6-536.66

SANTALOVA, N. A., VIDAVSKIY, L. M., DUNAYEVA, K. M., and IPPOLITOVA, YE. A.

"Enthalpy of Formation of Uranium Trioxide Semihydrate"

Leningrad, Radiokhimiya, Vol XIV, No 5, 1972, pp 721-726

Abstract: The calorimetric method was used to measure the enthalpy of the reaction of two specimens of uranium trioxide semihydrate with the composition $UO_3 \cdot 0.393H_2O$ and $UO_3 \cdot 0.648H_2O$ with a solution of hydrofluoric acid. At 298.15°K this enthalpy was -21.76± 0.08 and -20.83±0.110 kcal/g-atom of U respectively. The enthalpy of the formation of compounds belonging to the uranium trioxide semihydrate phase from uranium trioxide and water as a function of the composition is represented by a linear equation. For a stoichiometric compound this value is -3.19±0.10 kcal/g-atom of U. The published data were used to calculate the standard enthalpy of formation of uranium trioxide semihydrate from the elements. This enthalpy at 298.15°K was -333.15±0.46 kcal/g-atom of U. The method used to synthesize the uranium trioxide semihydrate and the chemical and x-ray phase analysis data are presented in connection with the existence of several versions of the semihydrate.

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USSR

UDC 541.451:546.791

KUZ'MICHEVA, YE. U., KOVBA, L. M., and IPPOLITOVA, YE. A.

"Oxidation of Uranium Dioxide at Temperatures Below 270°C"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 852-857

Abstract: The starting material was obtained by reduction of mixed oxides of $UO_3 \cdot H_2O$ at 800-900°; the reduced product had the composition $UO_{2.01-2.03}$. Phase composition and chemical analysis of the products obtained from air oxidation in temperature range 100-270°C were carried out. Oxidation of UO_2 in the range 100-150°C leads to the formation of tetragonal phase β-U_3O_7 with a c/a ratio of 1.01-1.02. Further oxidation in the range 180-250° leads to the formation of γ-U_3O_7, the the c/a ratio increasing to 1.027-1.032. At 270° UO_2 oxidizes to $UO_{2.473}$ in about three hours. Concurrently with γ-U_3O_7 there forms a rhombic phase $U_8O_{21\pm x}$ in which c/a = 1.697. Continuation of the oxidation of the oxidation at this temperature yields $UO_{2.703}$ with traces of γ-U_3O_7. The overall oxidation route of UO_2 may be represented as follows: UO_2

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USSR

KUZ'MICHEVA, YE. U., et al., Radiokhimiya, Vol 13, No 6, 1971, pp 852-857

β-U_3O_7 (c/a=1.01) $\xrightarrow{100\text{-}150}$ γ-U_3O_7 (c/a=1.027) $\xrightarrow{180\text{-}250}$ U_8O_{21+x} (c/=1.697) $\xrightarrow{260}$ $U_3O_{8\pm x}$ (c/a=1.689) $\xrightarrow{> 270}$

Experimental data failed to show formation of U_4O_9, α-U_3O_7 or δ-U_3O_7. The data support a two-stage diagram of the oxidation process of uranium oxide.

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USSR UDC 546.791.6'791.4

VIDAVSKIY, L. M., LAVUT, E. G., and IPPOLITOVA, YE. A.

"Conditions for the Formation of Uranium Trioxide"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, p 789

Abstract: Oxidation of mixed uranium oxides with oxygen at atmospheric pressure was studied. The reaction was carried out in a rotating oven - a quartz tube covered with a copper mantle. The oven temperature was maintained at 590-600°C. Only after 500 hrs traces of γ-UO_3 formation were observed. After 700 hrs the γ-UO_3 formed in more significant amounts. Lower uranium oxides may be oxidized to γ-UO_3 at 860-870°K and 1 atm oxygen pressure, but the reaction rate is still very low.

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USSR UDC 546.791.4.:547.29

LOBANOVA, T. S., DUNAYEVA, K. M., and IPPOLITOVA, YE. A., Chair of Inorganic Chemistry

"Study of the Complex Formation of Uranium (IV) with Acetate and Formate Ions"

Moscow, Vestnik Moskovskogo Universiteta, Vol 12, No 2, Mar-Apr 71, pp 229-231

Abstract: Uranium (IV) complexes with acetate and formate ions were studied. Tenoyltrifluoroacetone and tenoylacetonate were placed in contact with uranium (IV), in the presence of benzene, water and monocarboxylic acid. Stability constants for the ions $[U(Compl)_3]^{3+}$ and $[U(Compl)_2]^{2+}$ were determined by the distribution method at 20°C and the ionic strength μ=2 maintained by sodium perchlorate addition so as to decrease the possibility of the complexes being oxidized by atmospheric oxygen. The concentration of acetic and formic acids was varied in the range 0.032-2 and 0.1-2 N respectively. It was shown that no complex formation occurs in the aqueous phase. Stability constants for the complexes were determined from the graphs of F_1 plotted against the concentration of acetate and formate ions.

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UDC 546.791.6.546.66

USSR

SANTALOVA, N. A., VIDAVSKIY, L. M., DUNAYEVA, K. M., and IPPOLITOVA, Ye. A.

"Heat of Formation of Uranium Trioxide Dihydrate"

Leningrad, Radiokhimiya, Vol 13, No 4, 1971, pp 592-597

Abstract: An independent determination of the heat of formation of $UO_3 \cdot 2H_2O$ was carried out on the basis of the heat of formation of uranium hexafluoride in order to be able to compare the value obtained with that determined from the heat of the formation of a mixed uranium oxide. In the paper the experimental conditions are described in detail, followed by data of X-ray analysis and formulas used in calculation of the enthalpy. The value obtained differed from that based on mixed oxides. No systematic errors could be found, and the authors conclude that the discrepancy is due to the disagreement among the fluorine and oxygen calorimetry data.

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USSR

UDC: 541.69 + 542.91 + 547.416

GARIBDZHANYAN, B. T., STYEPANYAN, G. M., IRADYAN, M. A., and AROYAN, A. A., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Synthesis and Biological Studies of Some Novel Substituted Benzyl-bis-(β-chloroethyl)-amines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 2, 1970, pp 166-172

Abstract: The authors synthesized a series of 2-alkoxy-5-chlorobenzyl-chlorides by chloromethylation of p-alkoxychlorobenzene with paraformaldehyde and HCl in presence of anhydrous zinc chloride, and reacted it with diethanol amine in dioxane to obtain 2-alkoxy-5-chlorobenzyl-bis-(β-hydroxyethyl)-amines, which were eventually converted to hydrochlorides. Biological properties of these compounds and of 3-chloro-4-alkoxybenzyl-bis-(β-chloroethyl)-amines obtained earlier were studied on rats and mice, and it was determined that all of them were more toxic than corresponding bromo- derivatives. Some of them also exhibited somewhat higher antitumor activity.

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USSR UDC: 542.91 + 547.781.3

AROYAN, A. A., and IRADYAN, M. A., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"2-(2'-Alkaxy-5'-chlorobenzyl)-Δ^2-imidazolines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 2, 1970, pp 185-192

Abstract: Because many imidazolines are of interest due to their biological properties, being good sympatomimetic agents and antihistamines, the authors synthesized a series of such compounds with the goal of studying their structure-activity relationship. However, no biological data are reported in this paper. Reaction of iminoester or amidine hydrochlorides of 2-alkoxy-5-chlorophenylacetic acid with ethylenediamine (a 1:1 ratio of reagents, or a slight excess of the diamine) gave the series of imidazolines -- white crystalline compounds easily soluble in water, ethanol or acetone, and poorly soluble in methyl-ethyl ketone.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS AND BIOLOGICAL STUDY OF SOME NEW SUBSTITUTED BENZYLBIS (BETA CHLOROETHYL) AMINES -U-

AUTHOR-(04)-GARIBDZHANYAN, B.T., STEPANYAN, G.M., IRADYAN, M.A., AROYAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 166-72

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, CHEMICAL SYNTHESIS, CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ALKOXIDE, AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0789 STEP NO--UR/0426/70/023/002/0166/0172

CIRC ACCESSION NO--AP0119696

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

(2,ALKOXY,5,CHLOROBENZYL)BIS(BETA,CHLOROETHYL) AMINES (I) AND THEIR 4,ALKOXY,3,CHLOROBENZYL ISOMERS (II) WERE PREPD. AS ANTITUMOR AGENTS AND COMPARED WITH THE BROMO ANALOGS. THE CL DERIVS, WERE MORE TOXIC THAN THE BR ANALOGS. LARGER ALKOXY GROUPS IN I WERE LESS TOXIC, BUT IN II THE EFFECT OF LARGER ALKOXY GROUPS WAS THE REVERSE. SOME CHLORO DERIVS. WERE BIOL. MORE ACTIVE THAN THE BROMO COMPDS. 2,ALKOXY,5,CHLOROBENZYL CHLORIDES (III) WERE PREPD. BY CHLOROMETHYLATION OF N,ALKOXYCHLOROBENZENES WITH PARAFORMALDEHYDE AND HCL OVER ZNCL SUB2. (III) (0.1 MOLE), 0.2 MOLE HN(CH SUB2 CH SUB2 OH) SUB2, AND 40-50 ML DIOXANE GAVE 2,5,ROCLC SUB6 H SUB3 CH SUB2 N(CH SUB2 CH SUB2 OH) SUB2 (IV). IV (0.1 MOLE) IN 50 ML C SUB6 H SUB6 WITH 0.4 MOLE SOCL SUB2 IN C SUB6 H SUB6 GAVE I.HCL. FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SYNTHESES BASED ON 4,ALKOXYBENZYL AND 4,ALKOXYPHENYLAMINES -U-

AUTHOR-(03)-IRADYAN, M.A., MINASYAN, L.V., AROYAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(1), 54-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ALKOXIDE, BENZENE DERIVATIVE, AMINE, IMIDAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1450 STEP NO--UR/0426/70/023/001/0054/0060

CIRC ACCESSION NO--AP0116989

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0116889
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RHO,RC SUB6 H SUB4 Cl SUB2 NHC SUB6 H SUB4 OR PRIMEI RHO (I) WERE PREPD. BY HEATING 0.8 MOLE OF A 4,ALKOXYPHENYLAMINE WITH 0.2 MOLE 4,ALKOXYBENZYL CHLORIDE 6-8 HR (R, R PRIMEI, PERCENT YIELD, B.P. (1 MM), M.P., AND M.P. CHL SALT GIVEN): (CONTAINED ON MICROFICHE). FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--2 (2,ALKOXY,5,CHLOROBENZYL),2,IMIDAZOLINES -U-

AUTHOR-(02)-AROYAN, A.A., IRADVAN, M.A.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 185-92

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, CHEMICAL SYNTHESIS, HISTAMINE, INHIBITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0298 STEP NO--UR/0426/70/023/002/0185/0192

CIRC ACCESSION NO--AP0119287
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119287

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. (I) WERE PREPD. AS ANTIHISTAMINES. BU, 90, 128-9DEGREES. HEATING 0.05 MOLE III, 3.3 G ANHYD. (H SUB2 NCH SUB2)SUB2 (V), AND 20 ML ETOH, FOLLOWED BY TREATMENT WITH HCL GAS TO THE CONGO RED END POINT YIELDED I.HCL, ALSO OBTAINED ON HEATING 0.012 MOLE IV, 0.78 G ANHYD. V, AND 10 ML ETOH. THE FOLLOWING I.HCL WERE PREPD. (R, PERCENT YIELD, AND M.P. GIVEN: SHOWN ON MICROFICHE. FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

Acc. Nr: AP0038025 Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 37-44 .

SOME NONLINEAR OPTICAL EFFECTS IN POTASSIUM VAPOUR

Arutyunyan, V. M.; Badalyan, N. N.; Iradyan, V. A.; Movsesyan, M. Ye.

Some nonlinear effects (dependence of group velocity on intensity, phase modulation, pulse shape distortion, appearance of combined lines due to multiphoton interaction processes) are investigated theoretically near the $4P_{3/2} - 4S_{1/2}$ resonance of the potassium atom. Broadening of the spectral line of the second Stokes component of chloroform stimulated Raman scattering is observed on passage through a cell containing potassium at a saturated vapour pressure of 0.05—1.7 mm Hg. Under the same experimental conditions three-photon and five-photon scattering was observed.

REEL/FRAME
19731066

USSR

UDC 542.91:547.1'118

MUSLINKIN, A. A., NEKRESOVA, I. D., KUDRINA, M. A., YEGOROVA, N. V., IRAIDOVA, I. S., and LOGINOV, V. B., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Synthesis and Some Properties of Acrylic and Methacrylic Derivatives of Chlorophos and Its Analogues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 883-886

Abstract: Reaction of chlorophos and its analogues with acid chlorides of acrylic, metacrylic and α-fluoroacrylic acids gave new products with fungicidal activity: O,O-diphenyl-, O,O-di-n-butyl-, and O,O-dimethyl-(1-acroyloxy-2,2,2-trichloroethyl)phosphonate, di-n-butyl-(1-metacryloxy-2,2,2-trichloroethyl) phosphonate and O,O-d-n-butyl-(1-α-fluoroacroyloxy-2,2,2-trichloroethyl) phosphonate. Using O,O-di-methyl ether of 1-acetoxy-2,2,2-trichloroethylphosphonic acid as control, it has been established that replacement of the acetyl group by an acroyl or metacroyl radical increases the fungicidal activity and toxicity. Introduction of a chlorine atom onto an alkoxy group has a similar effect. Elongation of an alkoxy chain at the phosphorus atom decreases the toxicity.
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USSR UDC 577.150.4

IRAIDOVA, I. S., and NEKLESOVA, I. D., Candidate of Medical Sciences, Institute of Organic and Physical Chemistry, Academy of Sciences USSR

"Investigation of the Toxic Action Mechanism of O-Methyl-O-2,2-Dichlorvinyl-N-Dimethylamidophosphate on the House Fly"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, pp 38-40

Abstract: The experiment sought to determine the connection between the depth of poisoning of house flies and the degree of esterase suppression. Laboratory flies Musca domestica L. were poisoned by inhalation, in two groups of 300. The effects of poisoning were observed in one group, while esterase suppression was observed in the other group at 10, 20, 30, 360 and 780 minutes after treatment. Selected flies were decapitated and their heads and bodies were pulverized, centrifuged, then separated and analyzed. The bodies were pulverized in a substratum of acetylcholinchloride for determining cholinesterase activity and in methyl-n-butyrate for determining aliesterase activity. Esterase activity was determined according to Robbins' modification of Hestrin's method. Results showed a connection between the suppression of cholinesterase activity of the head and body, and poisoning symptoms. Suppression of aliesterase activity preceded the state of deep

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201120001-2"

USSR

IRAIDOVA, I. S., and NEKLESOVA, I. D., Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, pp 38-40

paralysis; at the time of its onset the enzyme's activity had been completely restored and did not diminish up until the death of the insects.

USSR UDC 542.91:661.718.1

NURETDINOV, I. A., NEKLESOVA, I. D., KUDRINA, M. A., IRAIDOVA, L. S., and BUINA, N. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Synthesis and Properties of Diethylaryl Seleno- and Thiophosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1266-1270

Abstract: The authors undertook to compare some properties of seleno- and thiophosphoric acid derivatives for the purpose of determining the effect of replacement of sulfur atom by selenium atom in the phosphyl group. For this purpose they synthesized a series of diethyl esters of arylthio- and selenophosphoric acids. The initial substances for the synthesis of these compounds were diethylaryl phosphites obtained by the interaction of phenol, 4-chlorophenol, 2,4-dichlorophenol and 2,4,5-trichlorophenol with diethylphosphorous acid diethylamide. The IR and NMR-P^{31} spectra of the resultant diethylaryl thio- and selenophosphates were studied. A study of the toxicity and insecticidal properties of these compounds showed that esters of selenophosphoric acid are more toxic for warm-blooded animals than their thio analogs and less toxic for insects. Replacement of the sulfur atom by the selenium atom in the phosphyl

USSR

NURETDINOV, I. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1266-1270

group leads to systemic action. A correlation is established between the anticholinesterase action of diethylaryl selenophosphates and their toxicity for insects.

USSR

UDC 541.69+547.241+591.0446

NEKLESOVA, I. D., KUDRINA, M. A., IRAIDOVA, I. S., KALIMULLIN, M. K., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Metabolism of Phosphoric Acid Ester Amides"

Moscow, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

Abstract: A study is described on the selective effectiveness of organophosphorus contact-type insecticides of the DDVP (0,0-dimethyl 0-2,2-dichlorovinyl phosphate) group. The in vitro-based data were followed up and confirmed by in vivo experiments. It is shown that 0-methyl 0-2,2-dichlorovinyl phosphate (II) and 0-ethyl 0-2,2-dichlorovinyl N-dimethylamidophosphate (III) are highly active insecticides, cholinesterase inhibitors in insects and warm-blooded animals and are aliesterase inhibitors in houseflies. 0-2,2-dichlorovinyl N-tetramethyldiamidophosphate (IV) is a relatively weak cholinesterase inhibitor in insects and warm-blooded animals. Compound II exhibits a systemic effect on insects with gnawing mouth parts. The toxicity and anticholinesterase activity of II, III and IV in flies is correlated. As

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USSR

NEKLESOVA, I. D., et al, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

for warm-blooded animals, the correlation was established only for II and III. Despite its low anticholinesterase activity, compound IV appears to be most toxic to white mice. Compound II is detoxified by liver tissue of warm-blooded animals, while IV is activated by them. Compound IV selectively affects the aliesterase of flies but is weakly active relative to the flies per se. This indicates that the insecticide activity of the organophosphorus compounds is not a result of aliesterase inhibition. The experimental data on the toxicity, antiesterase and anticholinesterase activities of the tested compounds are given in tables.

2/2

USSR

UDC 542.91+541.69:661.718.1

ARBUZOV, B. A., NURETDINOVA, O. N., NEKLESOVA, I. D., IRAIDOVA, I. S., KUDRINA, M. A., and YEGOROVA, N. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Synthesis and Biological Activity of Some Thioglycidyl and Thiethanyl Esters of Pentavalent Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2213-2217

Abstract: A series of thioglycidyl and thiethanyl esters of pentavalent phosphorus acid was synthesized and their biological properties were investigated. The thioglycidyl esters of dialkoxythio- and dialkoxydithiophosphoric acid exhibit no contact or systemic insecticidal activity, but they are active against pathogenic fungi. Toxicity of these compounds decreases considerably when C_2H_5O-groups are replaced with CH_3O-, when the alkoxy radical is enlarged to C_4, and when the -P(:O)-S-C group is replaced by -P(:O)-C- group. In contrast to the thioglycidyl, thioethanyl esters show distinct contact and systemic insecticidal properties coupled with higher toxicity towards the warm-blooded animals. The activity of O,O-diethylthiophosphoric ester being much less pronounced than that of O,O-diethyldithiophosphoric ester. Substitution of $-N(CH_3)_2$ for C_2H_5O- lowers the

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USSR

ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2213-2217

toxicity towards white mice, and the insecticidal and antifungal activity. When $-N(CH_3)_2$ is substituted by $-N(C_2H_5)_2$, a further reduction in toxicity takes place, the insecticidal activity disappearing altogether.

2/2

USSR

UDC 632.95

ALIKOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., IRAMDOVA, I. I., KERBABAYEV, E. B., NEKLESOVA, I. D., STERL'NIKOVA, G. N., FROLOVA, A. I.

"Insecticidal Properties of Methyl-O-Ethyl (Carbethoxymethyl) Dithiophosphonate"

Tr. VNII dezinfektsii i sterilis. (Works of the All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 73-76 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N427)

Translation: The results of experiments in studying the insecticidal activity of Me(EtO)P(S)SCH_2COOEt (I) (boiling point 89-92°C/0.02, $n^{20}D$ 1.5220) show that the compound has a fumigation effect and some contact action, but less than chlorophos. When applied to absorptive surfaces, the chemical is completely ineffective against household insects. Compound I has fumigatory activity against houseflies and is a larvicide against maggots. T. A. Belyayeva.

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UDC 632.95

USSR

ALIMOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., ZUBOVA, G. M., IRANDOVA, I. I., KERBABYEV, E. B., NEKLESOVA, I. L., STREL'NIKOVA, G. N., and FROLOVA, A. I.

"Insecticidal Properties of O-Methyl-O-Dichlorovinyl-N-Dimethyl Amidophosphate"

Tr. VNII dezinfektsii i sterilizats. (Works of the All Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 68-73 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N423)

Translation: The substance of formula $(MeO)Me_2NP(O)OCH=CCl_2$ (I) has strong contact, fumigation and intestinal action at the instant of application on houseflies, bedbugs and red cockroaches; the agent is not as strong as other organophosphorus insecticides with respect to mosquitoes. The most active form for application to a glass surface is a water emulsion prepared from compound I with OP-7 (1:1) and a solution in acetone. An alcohol solution is considerably less active. An investigation is made of the larvicidal activity of compound I. The insecticide has no residual effect. T. A. Belyayeva.

1/1

USSR UDC: 621.373.531(088.8)

MELENT'YEV, Ya. P., IRRITS-VAYVODS, Yu. S., Central Design and Planning and Technological Office of the Main Administration of the Fishing Industry of the Western Basin

"A Two-Channel Self-Excited Pulse Oscillator"

USSR Author's Certificate No 265184, filed 22 Jun 68, published 17 Jun 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G240 P)

Translation: This Author's Certificate introduces a two-channel self--excited pulse oscillator which contains a series-connected circuit made up of a power supply, charging choke, two thyristors and an output transformer, and also a capacitor with one plate connected between the thyristors and the other connected between the power supply and the output transformer. The device also contains semiconductor diodes and resistors. To increase efficiency and double the output pulse frequency, the primary windings of an additional pulse transformer are connected through resistors and semiconductor diodes in parallel with the anode-cathode junction of each thyristor. One of the secondary windings of this pulse transformer is connected between the controlling electrode of the first thyristor and the anode of the second thyristor, and the other secondary is connected between the controlling electrode and cathode of the second thyristor.
1/1

USSR UDC 678.046:539.38

KUZNETSOV, G. K., and IRGEN, L. A., Institute of Mechanics of Polymers of the Academy of Sciences, Latvian Soviet Socialist Republic, Riga

"Relationship Between Some Mechanical and Thermophysical Properties of Polymer Composites with Reduced Filler Concentration"

Riga, Mekhanika Polimerov, No 3, May-Jun 73, pp 487-491

Abstract: A study was made of the relationships between the modulus of elasticity, the linear expansion coefficient, the vitrification temperature, the decomposition temperature of epoxy compositions and the concentration of four fillers (chalk, calcium metasilicate, carbon black, and Aerosil) of differen physical and chemical nature. The introduction of the fillers into epoxy resin essentially changes the composition temperature, the compression modulus in high-elastic state, and the coefficient of expansion, and it somewhat increases the vitrification temperature of the composition. The filler can be characterized by the critical concentration φ_{crit} at which the vitrification of the polymer under the influence of the surface propagates over the whole volume of the polymer matrix. The value of φ_{crit} 1/2

USSR

KUZNETSOV, G. K., and IRGEN, L. A., Mekhanika Polimerov, No 3, May-Jun 73, pp 487-191

determines the rate of the change of the composition properties on filling. By replacing the filler concentration f with f_{crit}, the dependence, invariant to the filler nature, of a series of material properties can be determined. Four figures, two tables, seven bibliographic references.

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USSR UDC 636.24:621.32

BATARCHUKOVA, N. R., IRIKOVA, L. A.

"Light Sources With a Directional Movement of Cadmium-114 Atoms"

Trudy Metrologicheskikh Institutov SSSR (Works of the Metrological Institutes of the USSR), No 114 (174), 1970, pp 15-18 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 1, 1971, Abstract No 1.32.1372)

Translation: The article is devoted to a discussion of various designs of cadmium light sources. It is shown that lamps of the old design function with a large expenditure of cadmium over a very brief interval of time, and since cadmium-114 is an expensive material, it is necessary to design lamps with a packet of this material of a different design, which provides for the possibility of regeneration of the packet. Several new variants of lamps are proposed, in which the cadmium is regenerated during the process of burning of the lamp, and the quantity of the required element is very limited. Of particular interest is a lamp in the form of a ring. 3 figures. 4 bibliographic entries.

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USSR UDC: 51

BURKOV, V. N. and IRIKOV, V. A.

"Control of Operation Combinations With Supply Taken into Account"

Moscow, Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. vopr. Drogobych, 1971. Vyp. 3 (Transactions of the Fourth Winter School on Mathematical Programming and Related Problems, Drogobych, 1971, No 3) 1972, pp 134-145 (from RZh--Matematika, No 1, 1974, Abstract No 1V554)

Translation: A complex of operations is specified by the network $G = G(V,U)$, where V is a set of vertices corresponding to the operations of the complex and U is a set of arcs corresponding to the technical limitations on the order of the operations performed. For the performance of some of the operations, the supply of materials (spare parts and the like) is necessary; operations, moreover, cannot begin until the deliveries are made. Intensity of demand for the resources by the operations at each moment in time, the rate of performance of the operations, their duration, and the time for performance of the complex are introduced. It is required to determine the volume of the operations and construct a calendar

USSR

BURKOV, V. N. and IRIKOV, V. A., Tr. 4-y Zimn. shkoly po mat. programmir. i s smezhn. vopr. Drogobych, 1971. Vyp. 3, 1972, pp 134-145

plan for completing the complex, in which limitations on the resources are filled and some special function of expenses is minimized. The methods and algorithms of an exact solution for a number of particular cases of this problem are considered. A detailed discussion is given of the practical applications in the example of the repair of silver-casting plants on the scale of a mine. Ye. Levner.

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UDC 51

USSR

IRIKOV, V. A., SHEVEROV, V. G.

"An Approach to Planning Research and Development Programs"

Tr. Konf. Mosk. fiz.-tekhn. in-ta, 1970. Ser. Aerofiz. Prikl. mat. (Works of the Conference of Moscow Physico-Technical Institute, 1970. Aerophysics and Applied Mathematics Series), Moscow, 1971, pp 103-112 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V534)

No abstract

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--BIOMASS PRODUCTION -U-

AUTHOR--IRISKHANOV, KH.A.

COUNTRY OF INFO--USSR

SOURCE--USSR 241,371

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(8)

DATE PUBLISHED--10FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MICROORGANISM, CONTINUOUS CULTURE, CULTURE MEDIUM, HYDROCARBON, INDUSTRIAL WASTE, FOOD INDUSTRY, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1807 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130640

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0130640
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROORGANISMS ARE CULTIVATED ON PETROLEUM HYDROCARBON FRACTIONS, E. G. PARAFFIN, IN THE PRESENCE OF O AND A SUGAR CONTG. MEDIUM (E. G. WASTES OF ENZYME PRODUCTION, SUGAR BEET SYRUP, PLANT HYDROLYZATES) DILD. WITH H SUB2 O (PREFERABLY TO 0.1 0.5PERCENT ASSIMILABLE C COMPOS.) AND ENRICHED WITH ESSENTIAL MINERAL SALTS.

UNCLASSIFIED

USSR

UDC 541.63 + 547.92

GORYAYEV, M. I., IRISMETOV, M. P., and ROMACHENKO, G. N., Institute of Chemical Sciences, Acad. Sc. KazSSR, Alma-Ata

"Modified Steroids. IX. Synthesis of Heterocyclic Derivatives of the Steroid Alkalod Solasodine"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Khimicheskaya No 1, Jan-Feb 73, pp 70-73

Abstract: To a suspension of sodium methoxide in benzene, ethyl formate was added, followed by 5α-(5β-, or Δ^4)-3-ketosolasodane. After an overnight reaction the product was isolated from benzene to yield 2-hydroxymethylene-5α-solasodan-3-one, m.p. 219-220°C, and its 5β- and Δ^4 analog, melting, respectively, at 248-250°C and 212-214°C. These products reacted with hydrazine hydrate followed by hydroxylamine hydrochloride yield (3,2s) pyrazolo-5α-solasodane, m.p. 238-240° as well as the 5β- and Δ^4 analog, melting at 295-295° and 311-313° respectively and finally (3,2s)-isoxazolo-5α-solasodane, the 5β- and Δ^4 analog, melting at 228-229°, 234-235° and 214-215°, respectively.

USSR

VINOGRADOV, Ye. A.; IRISOVA, N. A.; KOZLOV, G. V. (Lebedev Physics Institute, USSR Academy of Sciences, Moscow)

"Birefringence of Crystalline Quartz in the Millimeter Range of the Spectrum"

Leningrad, Solid State Physics; November, 1970; pp 3155-9

ABSTRACT: A method of measuring the birefringence of anisotropic media in the submillimeter range of the spectrum which takes into account interference phenomena inside the sample is described. An equation is obtained which determines the relation of the phase shift $\Delta\Phi$ between ordinary and unusual waves passing through a plane-parallel plate of an anisotropic dielectric. A quasi-optical apparatus for measuring birefringence in the 110-150 billion-cycle range was devised. Measurement of the phase shift $\Delta\Phi$ was carried out with the aid of a compensator consisting of two one-dimensional reticular elements with fine, mutually perpendicular wires. The birefringence of natural crystalline quartz was measured on the apparatus, and the following values for the refractive indices n_o and n_e were obtained: $n_o = 2.10 \pm 0.03$, $n_e = 2.14 \pm 0.03$, $\Delta n = n_e - n_o = 0.0477 \pm 0.0003$.

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1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTROOPTICAL EFFECT IN LINBO SUB3 IN THE MILLIMETER RANGE -U-

AUTHOR-(03)-VINOGRADOV, YE.A., IRISOVA, N.A., KOZLOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 781-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROOPTIC EFFECT, DIELECTRIC LOSS, FREQUENCY CHARACTERISTIC, REFRACTIVE INDEX, NIOBATE, LITHIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/2033 STEP NO--UR/0181/70/012/003/0781/0784

CIRC ACCESSION NO--AP0106691

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106691

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR INVESTIGATION OF THE ELECTROOPTICAL EFFECT IN THE SUB MM RANGE. FORMULAS WERE OBTAINED WHICH DESCRIBE THE VARIATION OF THE AMPLITUDE AND THE PAHSE OF THE WAVE AT THE EXPENSE OF THE ELECTROOPTICAL EFFECT IN A PLANE PARALLEL PLATE. THE REFRACTIVE INDEX (N SUB0) AND DIELEC. LOSS TANGENT (TAN DELTA) WERE MEASUREDFOR THE CONVENTIONAL WAVE, AND THE NONLINEAR COEFF. R SUB22 FOR LINBO SUB3. THE FOLLOWING VALUES WERE OBTAINED FOR THESE PARAMETERS: N SUB0 EQUALS 7.2 PLUS OR MINUS 0.2, TAN DELTA EQUALS (2.5 PLUS OR MINUS 0.5) TIMES 10 PRIME NEGATIVE3, AND R SUB22 EQUALS (10 PLUS OR MINUS 2) TIMES 10 PRIME NEGATIVE10 CM-V. ALL THE MEASUREMENTS WERE CARRIED OUT AT 126-132 GHZ. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MOSSBAUER EFFECT ON PRIME121 SB NUCLEI IN YTTRIUM IRON GARNET -U-

AUTHOR-(04)-GOLOVNIN, V.A., IRKAEV, S.M., KUZMIN, R.N., MILL, V.V.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 35-7 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MAGNETIC FIELD, MOSSBAUER EFFECT, ANTIMONY ISOTOPE, ATOM, NUCLEUS, YTTRIUM, IRON, GARNET, DIAMAGNETISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1751 STEP NO--US/0000/70/011/001/0035/0037

CIRC ACCESSION NO--AP0133656

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133656
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION REVEALED A SUPEREXCHANGE INDUCTION OF MAGNETIC FIELDS ON THE DIAMAGNETIC SB ATOMS.
FACILITY: MOSCOW STATE UNIV. USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF STEREOREGULAR SYNTHETIC RUBBERS -U-

AUTHOR-(05)-LYAKUMOVICH, A.G., KONSTANDI, B.V., SULTANOVA, M.KH., [redacted] V.S., IRKHIN, V.L.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 236,002

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CONJUGATED POLYMER, SYNTHETIC RUBER, POLYISOPRENE, PARAMAGNETISM, TITANIUM CHLORIDE, ORGANOALUMINUM COMPOUND, ELECTROMAGNETIC FIELD, POLYMERIZATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1443 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126842

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE [illegible]

CIRC ACCESSION NO--AA0128842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEREOREGULAR SYNTHETIC RUBBERS WERE OBTAINED BY POLYMG. CONJUGATED DIENES, SUCH AS ISOPRENE, IN CATALYTIC SYSTEMS CONTG. SUCH PARAMAGNETIC COMPONENTS AS TICL SUB4 AND ISO BU SUB3 AL. TO INCREASE THE NO. OF CIS,1,4 UNITS AND TO IMPROVE THE PROPERTIES, POLYMN. WAS DONE IN A VARIABLE OR CONST. ELECTROMAGNETIC FIELD.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SOLUBILITY OF ANHYDROUS MOLYBDENUM TRIOXIDE IN AQUEOUS SULFURIC ACID SOLUTION -U-

AUTHOR-(03)-IRKOV, F.YA., PALANT, A.A., REZNICHENKO, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1354-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, MOLYBDENUM OXIDE, SULFURIC ACID, SOLUTION CONCENTRATION, HEAT OF REACTION, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1416 STEP NO--UR/0078/70/015/005/1354/1358

CIRC ACCESSION NO--AP0135090

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135090

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF MOO SUB3 DEPENDS ON H SUB2 SO SUB4 CONCN. IN AQ. SOLN. AND SHOWS A MAX. AT 18-20 WT. PERCENT H SUB2 SO SUB4. WITH INCREASING TEMP., THE SOLY. DECREASES. A 1:1 COMPLEX OF MOO SUB3 WITH H SUB2 SO SUB4 FORMS IN THIS SYSTEM. DELTA HDEGREES OF THE REACTION OF MOO SUB3 WITH H SUB2 SO SUB4 IS MINUS 6.3 KCAL-MOLE.

UNCLASSIFIED

USSR

UDC 576.858.6.083.35.07

ZHDANOV, V. M., BYKOVSKIY, A. F., AL'TSHTEYN, A. D., LOZINSKIY, T. F., URYVAYEV, L. V., VOLKOVA, M. L., YERSHOV, F. I., IL'IN, K. V., BEKTEMIROV, T. A., IRLIN, I. S., MILLER, G. G., ZAKHAROVA, L. G., PEREKREST, V. V., GERASINA, S. F., and SEVAST'YANOVA, M. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"Detection of Oncornaviruses in Continuous Tissue Cultures"

Moscow, Voprosy Virusologii, No 4, 1973, pp 411-414

Abstract: Studies were conducted on a number of human and animal continuous tissue cultures maintained in medium 199 containing 10% bovine serum to determine oncornaviruses. Formation of oncornaviruses in the tissue cultures were followed by the appearance of virtal particles in the culture fluid labeled with H3-uridine, susceptibility of their synthesis to low actinomycin D concentrations, appearance of these particles following inhibition of nuclear material synthesis by bromodeoxyuridine or mitomycin, presence of reverse transcriptase in these particles, presence of 60-70 S RNA in these particles, and electron microscopy. Of the 26 human lines investigated 14 contained type B oncornavirus, and 4 lines type C virus. Eight of the

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USSR

ZHDANOV, V. M., et al., Voprosy Virusologii, No 4, 1973, pp 411-414

14 animal lines studies also showed the presence of oncornaviruses. The source of these viruses in the human lines remains unclear, but the source may have been bovine serum or porcine trypsin used in the preparation of cell suspension. It is noteworthy that type B viruses were isolated in human cultures of epithelial origin, while type C viruses in human cultures of leukotic or sarcomatous origin.

2/2

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INDUCTION OF DNA SYNTHESIS AND MITOSES BY POLYOMA VIRUS IN STEADY STATE CELL CULTURES -U-

AUTHOR-(02)-MAKAROVA, G.F., IRLIN, I.S.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(3), 357-65

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, EMBRYOLOGY, TUMOR, VIRUS, AUTORADIOGRAPHY, TRITIUM, CHEMICAL LABELLING, DNA, MITOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2229 STEP NO--UR/9053/70/012/003/0357/0365

CIRC ACCESSION NO--AP0127591

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PATTERNS OF PROLIFERATION OF NORMAL EMBRYONIC HAMSTER AND MOUSE STEADY STATE CULTURE AND THAT INFECTED WITH POLYOMA VIRUS WERE STUDIED BY RADIOAUTOGRAPHY USING THYMIDINE H PRIME3. IN THE INFECTED CULTURES A STIMULATION OF MITOTIC ACTIVITY WITH DNA SYNTHESIS WAS OBSD. IN THE INFECTED CULTURE OF HAMSTER CELLS, THE MITOTIC CYCLE IS REDUCED AND THE PROLIFERATION POOL IS HARPLY INCREASED, SUGGESTING THAT THE POLYOMA VIRUS IS ABLE TO INDUCE DNA SYNTHESIS. THE INCREASED NO. OF MITOSES INVOLVING CELLS WHICH ALREADY COMPLETED DNA SYNTHESIS SHOWS THAT THE INDUCTION OF MITOSES BY POLYOMA VIRUS INFECTION IS INDEPENDENT OF THE INDUCTION OF DNA SYNTHESIS. FACILITY: LAB. KARVOL., INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 661.184

YAROSHENKO, N. A., DEMCHENKO, P. A., FESHCHENKO, N. G., and IRODIONOVA, A. F., Institute of the Chemistry of High-Molecular Compounds, Academy of Sciences UkrSSR, and Institute of Organic Chemistry, Academy of Sciences UkrSSR

"The Surface Activity of Alkylphosphonic Acids and of Their Sodium Salts in Aqueous Solutions at Various Temperatures"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 19, No 9, Sep 73, pp 895-899

Abstract: The isotherms in the 20-90° range of the surface tension of aqueous solutions of the alkylphosphonic acids $RP(O)(OH)_2$ ($R = C_8$, C_9, C_{10}, C_{12}, C_{16}) at various concentrations and also of their acidic and neutral Na salts were determined. The neutral and acidic salts had a surface activity that was twice as high and five-six times as high, respectively, as that of Na salts of alkylcarboxylic acids RCOOH ($R = C_8$-C_{16}). The surface activity increased in the order $RP(O)(ONa)_2 < RP(O)(OH)ONa < RP(O)(OH)_2$. The tendency of the last two members of this series to form intermolecular hydrogen bonds increased their surface activity. Because of the more pronounced metallic characteristics of P as compared with C or S, the compounds $RP(O)(OH)_2$ and $RP(O)(OH)ONa$ had a high surface activity which decreased to a relatively slight extent with increasing temperatures of their solutions. This decrease was particularly small for $R = C_{12} - C_{16}$ and became somewhat greater for $R = C_8 - C_{10}$.

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USSR

UDC 547.241

FESHCHENKO, N. G., IRODIONOVA, L. F., KOROL', O. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Alkylation of Phosphorus Diiodide and Red Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 773-776

Abstract: Lower alcohols (n-propyl, n-butyl, n-amyl and isoamyl) react with red phosphorus and iodine in a ratio of 1 : 1.2 : 3 at high temperatures (without pressure) much more rapidly than do the corresponding alkyl iodides with phosphorus diiodide or phosphorus and iodine. The reaction results in the formation (following decomposition of the reaction mixture with a solution of sodium hydroxide) of trialkylphosphine oxides and phosphinic or phosphonic acids. A study of the alkylation of phosphorus diiodide or a mixture of red phosphorus and iodine with alkyl iodides in the presence of phosphoric acid showed that the formation of acid products is due to the presence of the phosphoric acid, which not only changes the direction of the reaction, but also helps to speed it up.

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1/3 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ALKYLATION OF PHOSPHORUS DIIODIDE AND RED PHOSPHORUS -U-

AUTHOR-(04)-FESHCHENKO, N.G., IRODIONOVA, L.F., KOROL, O.I., KIRSANOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 773-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, PHOSPHORUS, IODINE, IODINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1362 STEP NO--UR/0079/70/040/004/0773/0776

CIRC ACCESSION NO--AP0128765

UNCLASSIFIED

2/3 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128765

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOWER ALCS. (C SUB3-5) REACT WITH RED P AND IODINE IN 1:1.2:3 RATIO AT ELEVATED TEMP. WITHOUT PRESSURE MUCH MORE RAPIDLY THAN THE ALKYL IODIDES WITH SAME RADICALS REACT WITH P SUB2 I SUB4 OR P SUB4 I SUB2. AFTER ALK. TREATMENT THE REACTION MIXTS. YIELD TERTIARY PHOSPHINE OXIDES, AND PHOSPHONIC AND PHOSPHINIC ACIDS. ALKYL IODIDES IN THE PRESENCE OF H SUB3 PO SUB4 REACT WITH P AND IODINE OR WITH P SUB2 I SUB4 JUST AS DO THE CORRESPONDING ALCS. THE MIXED ROH AND IODINE IN THE ABOVE RATIO WERE TREATED WITH RED P AT SMALLER THAN 70DEGREES, THEN REFLUXED UNTIL CONDENSATION OF RI CEASED IN THE REFLUX CONDENSER AND AFTER TREATMENT WITH 20PERCENT NAOH AND EXTN. WITH C SUB6 H SUB6 GAVE IN THE ORG. LAYER THE REQUISITE R SUB3 PO; THE ALK. LAYER GAVE ON ACIDIFICATION THE APPROPRIATE ACIDS. THE FOLLOWING YIELDS OF INDICATED PRODUCTS WERE OBTAINED AFTER REACTION (HR DURATION IN PARENTHESES) OF THE ALCS. WITH INDICATED RADICALS: PR (40-4) 50.3PERCENT R SUB3 PO AND 32-7PERCENT R SUB2 PO SUB2 H; BU (12), 43PERCENT R SUB3 PO, 45PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 94-5) (4-5), 32PERCENT R SUB3 PO AND 50PERCENT RPO SUB3 H SUB2; ISO-C SUB5 H SUB11 SUB11 (4) 80PERCENT R SUB3 PO; AND PHCH SUB2 CH SUB2, 79PERCENT R SUB3 PO. OCTYL IODIDE WITH P SUB2 I SUB4 IN THE PRESENCE OF 1-2 MOLES H SUB3 PO SUB4 WAS HEATED GRADUALLY TO 200-10DEGREES IN VARIOUS PROPORTIONS AND, AFTER AN ALK. TREATMENT, GAVE UP TO 40PERCENT R SUB3 PO, UP TO 18PERCENT R SUB2 PO SUB2 H AND 34PERCENT RPO SUB3 H SUB2, THE ACIDS BEING ISOLATED IN THE FORM OF CHLORIDES.

UNCLASSIFIED

3/3 012 UNCLASSIFIED

CIRC ACCESSION NO--AP0123765 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--IT WAS SUGGESTED THAT IN THIS REACTION P SUB2 I SUB4 AND H SUB3 PO SUB4 FORM A REACTIVE INTERMEDIATE WITH HO OR OTHER REACTIVE GROUPS WHICH CANNOT BE REPLACED BY R; THIS APPEARS TO BE UNSTABLE AND ABLE TO REACT INSTANTLY WITH RI OR WITH ITSELF, AS IT COULD NOT BE ISOLATED. REACTION OF 2:2:2:2:1 MIXT. OF RI, RED P, I SUB2 AND H SUB3 PO SUB4 GAVE THE FOLLOWING YIELDS: PR (33 HR) 52.7PERCENT R SUB3 PO AND 28.5PERCENT R SUB2 PO SUB2 H; BU (12 HR) 41.4PERCENT R SUB3 PO, AND 52PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 (4 HR) 42.2PERCENT R SUB3 PO AND 48.6PERCENT RPO SUB3 H SUB2; ISO-C SUB5 H SUB11 (9 HR) 32.2PERCENT R SUB3 PO AND 57PERCENT RPO SUB3 H SUB2; CYCLO-C SUB6 H SUB11 (2 HR) 11PERCENT R SUB3 PO, 40PERCENT R SUB2 PO SUB2 H AND 32.6PERCENT RPO SUB3 H SUB2; AND PHCH SUB2 CH SUB2 (11 HR) 52PERCENT R SUB3 PO, AND 34.8 PERCENT R SUB2 PO SUB2 H.

FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EXTRACTION OF GLYCEROL FROM TAR OILS OBTAINED DURING THE DISTILLATION OF FATTY ACIDS -U-

AUTHOR-(02)-IRODOV, M.V., IVANOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 24-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FATTY ACID, GLYCEROL, SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1576 STEP NO--UR/9085/70/036/002/0024/0025

CIRC ACCESSION NO--AP0118559

UNCLASSIFIED

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AP0118559 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TAR OILS REMAINED AFTER DISTN. OF FATTY ACIDS FROM 3RD CLASS BONE FAT WERE CLEAVED BY THE CONTACT PROCESS OR THE RESISTANCE METHOD UNDER 25 ATM. WITH 100PERCENT BY WT. H SUB2 O. THE LATTER METHOD GAVE 86.1PERCENT CLEAVAGE. THE GLYCEROL WATERS OBTAINED WERE NEUTRALIZED WITH CA(OH) SUB2 AND EVAPD. WITH ADDN. OF SILICONE AS ANTIFOAM AGENT, TO GIVE 88PERCENT CRUDE PRODUCT WITH 5-6PERCENT YIELD CALCD. FOR GLYCERIDES IN THE STARTING TAR OIL. THE DISTN. GAVE A PURE PRODUCT CONTG. 97PERCENT GLYCEROL.

UNCLASSIFIED

USSR

UDC: 533.652/.661.013

IRODOV, R. D.

"Pitching Stability Criterion of a Screen Plane"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute) 1970, No. 4, vol. 1, pp 63-72 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 25378)

Translation: Some problems are considered of the dynamic pitching stability of a screen plane with small wing spread. Only the short-term movement is considered. Increases in the lift force and longitudinal moment coefficients are considered to be linearly dependent on the increase in attack angle and the altitude above the screen. Also, in the expression for the increase in the longitudinal moment factor are terms which are linearly dependent on the increase in deviation angle of the stabilizer, the derivative of the angle of attack with respect to time, and the angular velocity of the pitching. The characteristic fourth-order equation breaks down if the aerodynamic coefficients are independent of the altitude in two independent equations, one describing the change in the angle of attack, the other describing the altitude of the

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USSR

IRODOV, R.D., Uch. Zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute) 1970, No 4, vol 1, pp 63-72 (from RZh-Mekhanika, No 2, Feb 71, Abstract No 2B378)

flight. In this case, the aircraft, stable in its attack angle, is neutralized in altitude, and requires continuous interference from the human or the automatic pilot. In flight, close to the screen, the dependence of the aerodynamic coefficients of the altitude cannot be neglected. In that case, it is necessary to choose the aerodynamic grouping such that the position of the focus with respect to height above the screen is in front of the focus with respect to attack angle, to provide aperiodic stability of the screen plane. To provide oscillatory stability, correct choice of centering is required. For proper stability, the screen plane should have a grouping which differs from that characteristic of aircraft. Possible groupings are: high placement of the horizontal empennage, no tail assembly with an excess in the radical part. G. S. Aronin

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USSR

KAPLER, R., NEKRASOV, L. I., IROSHNIKOVA, N. G., and MAMLEYEVA, N. A., Chemistry Faculty, Moscow State University imeni M. V. Lomonosov

"Paramagnetic Properties of Adsorption Layers of Chlorophyll a and b on Aluminum Oxide"

Moscow, Biofizika, Vol 16, No 1, Jan/Feb 71, pp 32-38

Abstract: Analysis of the electron paramagnetic resonance spectra of adsorbed chlorophyll a and b showed that when chlorophyll is adsorbed on aluminum hydroxide, the concentration of paramagnetic centers is 0.6 to 1.1% of the quantity of adsorbed molecules of the pigments. The number of paramagnetic centers was found to be related to the temperature, duration of light, and conditions under which the samples were kept (vacuum or air). The thermal energy required to activate the formation of unpaired electrons was determined. It is conjectured that the source of the electron paramagnetic resonance signal may be dimers formed from the strong inner overlapping of the pi-electrons of two adjacent chromatophores. The dimers are stabilized by the formation of a complex with charge transfer.

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ISOTOPIC EXCHANGE OF O, M, AND P,B,IODOCARBORANES -U-

AUTHOR-(02)-STANKO, V.I., KROSHNIKOVA, N.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 311-15

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ISOTOPE EXCHANGE, IODINATED ORGANIC COMPOUND, ORGANOBORON COMPOUND, CARBORANE COMPOUND, SODIUM, ISOTOPE, IRON COMPOUND, CATALYST, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1410 STEP NO--UR/0079/70/040/002/0311/0315

CIRC ACCESSION NO--AP0101500

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOTOPE EXCHANGE IN O, M, AND P,IODOCARBORANES WAS STUDIED WITH 10,IODO,O,CARBORANE, 9, IODO,M,CARBORANE, DIIODO,P,CARBORANE AND 9,10,11,12,TETRAIODO,O, CARBORANE, PREPD. BY ELECTROPHILIC HALOGENATION. THE EXCHANGE OF 1,IODO,O,CARBORANE WITH NA PRIME131 I PROCEEDS IN THF ONLY IN THE PRESENCE OF FE(II) SALTS AND IS BEST DONE AT PH 7-9; ALONG WITH EXCHANGE THERE ALSO OCCURS RING CLEAVAGE AND FORMATION OF SOME 25PERCENT B-PRIME131 I,DICARBAUNDECABORATE. WITHOUT ADDED FESO SUB4, THE EXCHANGE DOES NOT EXCEED 10 TO 12PERCENT, WHILE WITH FESO SUB4 IT REACHES 60 TO 70PERCENT. 9,IODO,M,CARBORANE EXCHANGES ITS IODINE IN THE ABSENCE OF FESO SUB4 AND THE YIELD IS SIMILAR TO 10PERCENT, BUT THE PRESENCE OF H SUB2 O AFFECTS THE REACTION GREATLY: WITH 5:1 THF-H SUB2 O AS THE MEDIUM, THE EXCHANGE IS ALMOST WHOLLY INHIBITED.

2,IODO,P,CARBORANEREACTS UNDER SIMILAR CONDITIONS ALSO, WHILE 10,12,DIIODO,AND 9,10,11,12, TETRAIODO,O,CARBORANES EXCHANGE THEIR IODINE CONTENT MANY TIMES MORE READILY IN THE PRESENCE OF FESO SUB4 THAN IN ITS ABSENCE; ALONG WITH THE EXCHANGE THE SIDE REACTIONS NOTED ABOVE ALSO OCCUR. THE ACTION OF FE(II) AS THE CATALYST IS ASCRIBED TO A COMPLEX FORMED BY FE PRIME POSITIVE PRIME POSITIVE ION AT THE IODINE ATOM OF THE IODOCARBORANE, FOLLOWED BY PROBABLE FORMATION OF AN ANION RADICAL SUCH AS C SUB2 B SUB9 H SUB11 BI-TIMES PRIME NEGATIVE AND FE PRIME POSITIVE POSITIVE POSITIVE; THE FORMER MAY LIBERATE I TIMES AND C SUB2 B SUB9 H SUB11 B NEGATIVE OR POSSIBLY C SUB2 B SUB9 H SUB11 B TIMES PRIME POSITIVE, I NEGATIVE AND FE PRIME POSITIVE POSITIVE POSITIVE, AND THE I NEGATIVE COMING FROM THE NA PRIME131 I.

UNCLASSIFIED

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UDC 669.721.372

USSR

ZUYEV, N. N., IVANOV, A. B., VUKOLOV, V. V., SVALOV, G. N., IRTEGOV, N. N., GENKIN, Ye. N., AGALAKOV, V. A., SHCHELKONOGOV, A. A., SABUROV, V. F., and KIRILENKO, I. S.

"Flow Line for Magnesium Production"

Moscow, Tsvetnyye Metally, No 9, Sep 71, pp 36-37

Abstract: An experimental-industrial flow line which uses smelted carnallite as the raw material for the production of magnesium has been established at a Soviet plant. The operation of the flow line is described by reference to a diagram and the distribution of slime (with 20% MgO) by electrolyzers showing the maximum output of slime (up to 60% of its total amount) on the first 3-4 electrolyzers. It is shown that the centralized feeding of diaphragm-type electrolyzers provides a 3-4% increase of magnesium output. To maintain normal temperature conditions and compensate for heat losses, it is necessary to provide for an increase of current intensity and electrolyzer output by 10-12%, in comparison with electrolyzers with individual feeding. Two illustr., three biblio. refs.

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UDC 669.721.472(088.8)

USSR

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SHARUNOVA, G. M., SVALOV, G. N., IRTEGOV, N. N., SABUROV, V. F., SHCHELKONOGOV, A. A., GRUDOVSKIY, N. P., and KISELEV, A. V., All-Union Scientific Research and Design Institute of Aluminum, Magnesium, and Electrode Industry, Bereznikovskiy Titanium-Magnesium Combine

"Method of Cutting-Off the Electrolyte Supply of a Production Line Magnesium Electrolytic Reduction Cell"

USSR Author's Certificate No 260905, filed 21 Oct 68, published 5 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G135 P)

Translation: A method is proposed for switching-off the electrolyte supply to a production line magnesium electrolytic reduction cell for subsequent diffusion of scum by increasing the temperature of the electrolyte and the concentration of magnesium chloride. To avert disruption of the operation of the production line electrolytic reduction cell at the input into the cathode cell of the electrolytic reduction cell, shields are placed, which separate the working space of the electrolytic reduction cell from the electrolyte flow in the distribution canal.

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UDC 621.317.361

USSR

IRTEGOV, YU. N., ISKANDAROV, F., PETRAKOVA, V. N., PURCHENOV, V. P., SHAMIN, G. F., and ZYKOV, A. A.

"A Device for Determining and Recording the Spectral Characteristics of Complex Signals"

USSR Author's Certificate No 363930 kl G 01 r 23/18, filed 20 Jan 71, published 7 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A437P)

Translation: A device is proposed for determining and recording the spectral characteristics of complex signals, containing an input apparatus, a group of band-pass filters, a filter interrogation unit, a recording unit with electrodes, and a paper tape transport unit.

To improve the accuracy, the output of the filter interrogation unit is connected through an analog-code converter and recirculator in series, one of the inputs of which is connected to the control unit; the amplitude gradation decoder is connected to the inputs of an arbitrary symbol synthesizer.

In this approach, the control inputs of the synthesizer are connected to the outputs of a vertical symbol scanning unit. The second input of this unit is

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IRTEGOV, YU. N., et al., USSR Author's Certificate No 363930 kl G 01 r 23/18

supplied with a signal from a cycle pulse generator. The control inputs of the synthesizer are also connected to the outputs of a horizontal symbol scanning unit, the input of which is connected through an electrode counter (whose input is supplied with a signal from the cycle pulse generator) to the inputs of the control unit. The control inputs of the synthesizer are also connected in parallel through the inputs of an "AND" gate to the decoder of the addresses of electrodes connected to the recording unit. One illustration.

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USSR UDC 517.917

IRTUGANOV, R. K.

"Solution of the Center Problem in One Case"

Uch. zap. Kazan. gos. ped. in-t (Scientific Notes of Kazan State Pedagogical Institute), 1970, No. 83, pp 37-41 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B204)

Translation: Necessary and sufficient conditions are given for the coordinate origin being the center for the equation

$$\frac{dy}{dx} = \frac{-x + P_2(x, y)\sqrt{x^2+y^2}}{y + Q_2(x, y)\sqrt{x^2+y^2}},$$

where P_2 and Q_2 are homogeneous polynomials of the second degree, and for the equation

$$\frac{dy}{dx} = \frac{-x + [P_1(x, y) + P_2(x, y)]\sqrt{x^2+y^2}}{y + Q_1(x, y)\sqrt{x^2+y^2}},$$

where P_1 and Q_2 are nonlinear homogeneous forms. N. Rozov.

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1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--BASICITY AND REACTIVITY OF ACETALS -U-

AUTHOR-(05)-VASILYEV, N.I., VOLKOV, V.P., IRZHAK, V.I., TELEGIN, G.F., YENIKOLOPYAN, N.S.
COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL.1970, 11(3), 579-83

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETAL, SOLUTION ALKALINITY, ALKOXIDE, SILANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/D02 STEP NO--UR/0195/70/011/003/0579/0583

CIRC ACCESSION NO--AP0140285
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BASICITY OF 10 ACETALS WAS DETD. BY IR SPECTROSCOPY BY THE SHIFT OF UPSILON SUBOH DUE TO ASSOCN. WITH PHOH. ALL INVESTIGATED ACETALS ARE VERY WEAK BASES (KAPPA SUBASSOCN. LESS THAN 4.1) AND THEIR BASICITY DOES NOT AFFECT THEIR REACTIONS WITH ALKOXY SILANES. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TRIOXANE POLYMERIZATION IN THE PRESENCE OF TRITYL HEXAFLUOROANTIMONATE -U-

AUTHOR-(04)-SMIRNOV, YU.N., VOLKOV, V.P., IRZHAK, V.I., YENIKOLOPYAN, N.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1403-6 (PHYS. CHEM.)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TRIOXANE, POLYMERIZATION KINETICS, FLUORINATED ORGANIC COMPOUND, ORGANOANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1142 STEP NO--UR/0020/70/190/006/1403/1406

CIRC ACCESSION NO--AT0119996

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0119996
ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE CONVERSION OF TRIOXANE DURING ITS POLYMN. IN THE PRESENCE OF PH SUB3 CSBF SUB6 DOES NOT PROCEED TO COMPLETION. THE CONVERSION LEVEL, THE REACTION RATE, AND THE INITIATION RATE CONSTS. INCREASE WITH PH SUB3 CSBF SUB6 CONCN. AND THE TEMP. THE ACTIVATION ENERGY IS 7 PLUS OR MINUS 1 KCAL PER MOLE. KINETICALLY, THIS CATIONIC POLYMN. IS IDENTICAL WITH FREE RDICAL POLYMNS. THE INITIATION RATE DECREASES AND THE CHAIN TERMINATION RATE INCREASES DURING THE REACTION, WHICH RESULTS IN A STEADY STATE BEING REACHED BEFORE CONVERSION IS COMPLETE. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVAK, USSR.

USSR

UDC 575.858.5.083.35:611-013.7-083.3

IRZHANOV, S. D., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Culturing Some Respiratory Viruses in Organ Cultures of Human Embryos"

Moscow, Voprosy Virusologii, No 5, 1971, pp 569-573

Abstract: Influenza A2 virus was able to replicate in various human embryonic tissues. The degree of replication varied with the type of tissue used. Maximum titers of infectious activity and hemagglutination were observed in lung, brain, and kidney cultures. The virus barely survived in cultures of heart, esophagus, liver, spleen, stomach, and intestine. Adenovirus reproduced readily in cultures of lungs, kidneys, liver, and intestine, but not in organ cultures of the heart, esophagus, stomach, or spleen. Parainfluenza and respiratory-syncytial viruses reproduced only in brain, lung, and kidney tissues. In another series of experiments, influenza A2 virus remained highly infectious after four consecutive passages in lung culture. The ability of respiratory viruses to reproduce in human embryonic kidney and brain tissues may be related to the frequent involvement of the central nervous system and kidneys (meningoencephalitis, nephritis) observed in acute respiratory diseases in man.

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IRZHANOV, S. D.

Medicine/
Virology

SO: JPRS 54539
23 NOV 71

UDC: 576.858.75.083.33

INFLUENZA INFECTION IN GUINEA PIG AND MOUSE LUNG CULTURES

(Article by Yakub Khasin, S.D. Irzhanov, Institute of Epidemiology and Microbiology imeni N.F. Gamaleya, USSR Academy of Medical Sciences, Moscow; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 10, 1971, pp 81-87)

Bang and Niven, Hoorn (1964, 1966), Hoorn and Tyrell, Tyrell and Hoorn reported that it is possible to cultivate influenza virus and other respiratory viruses in organ cultures of the nasal and tracheal epithelium of man and polecats. Reproduction of respiratory viruses was associated with specific degeneration of superficial ciliated epithelial cells followed by their desquamation. The morphological changes in infected organ cultures of the nasal and tracheal mucosa were comparable to the changes in respiratory tract cells of sick humans as well as in animals sensitive to respiratory viruses. This indicated to the authors that organ cultures of nasal and tracheal epithelium, which preserve the typical morphological structure, as well as some functions (secretion of mucus, vibration of cilia), could serve as an experimental study in investigations dealing with demonstration of respiratory tract lesions specific for the virus.

In a preliminary report (S.D. Irzhanov and Kh.Zh. Zhumatov) we voiced the opinion that organ cultures of human and animal lungs could also serve as an experimental model for investigation of lung pathology associated with respiratory virus infections.

In the present article we submit the results of histological investigation of organ cultures of lungs from young guinea pigs and mice in a control and with influenza virus infection.

Material and methods. The lung was extracted from 3-7-day-old guinea pigs and mice following decapitation under aseptic conditions; it was then sliced with a razor into fragments no more than 1 mm in diameter and washed in saline with antibiotics. Some of the fragments were infected with influenza viruses by means of contact with diluted virus-containing allantoic fluid from chick embryos. We used strains of influenza viruses A2 (Moscow-93), 62 and 3 (Alma Ata-41) 67 with an initial infectivity titer of 10^8 EID_{50} [equivalent

USSR UDC 612.58

ISAAKYAN, L. A., MASLENNIKOVA, L. S., OL'NYANSKAYA, R. P., and TRUBITSYNA, G. A.
Group for the Study of the Physiology of Bioadaptation, Institute of Physiology imeni I. P. Pavlov, USSR Academy of Sciences, Leningrad

"On Certain Changes in Oxygen Metabolism in the Animal Organism and Tissues During Cold Adaptation"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 59, No 11, Nov 73, pp 1.742-1.749

Abstract: White rats and golden hamsters were subjected to intermittent adaptation to 4°C. Control animals were maintained at 22°C. In vivo and in vitro studies demonstrated that oxygen consumption was greater in cold-adapted animals, as well as in their organs and tissues. However, increased oxygen consumption was not accompanied in the adapted animals by increased contractile function of the muscles. Muscle bioelectric activity in cold-adapted animals was lower than in control animals. The calorigenic effect of norepinephrine was greater and longer in adapted animals than in controls; a possible explanation of this effect was dissociation of oxidative phosphorylation in the adapted animals.

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USSR

UDC 612.273

ZHIRONKIN, A. G., Director, and ISAAKYAN, L. A. and TROSHIKHIN, G. V., Laboratory of Physiology of Respiration, Institute of Physiology imeni I. P. Pavlov

"The Effect of Increased Atmospheric Pressure on O_2 Content in the Muscle Tissue of Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, Jul 72, pp 1109-1114

Abstract: In underwater diving and certain other areas, the effect of the density of gases inspired on physiological processes is of practical significance. In addition, discovering the mechanism of the toxic effect of high partial pressures of inert gases is important for theory. In this experiment, the aO_2 content in the quadriceps femoris muscle of 70 male Wistar rats (and their rectal temperature) was checked by the polarograph method during a 5-hour exposure in helium-oxygen and nitrogen-oxygen mixtures (21% oxygen) at different temperatures and pressures. In the helium-oxygen atmosphere at a temperature of 28°C, a marked decrease in the aO_2 level in the quadriceps femoris muscle was noted during a 5-hour exposure at a pressure of 20 kg/cm^2, and particularly at 40 kg/cm^2. Raising the temperature to 30°C lessened the reaction, indicating that it can be attributed to the cooling effect of helium.

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USSR

ZHIRONKIN, A. G., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, Jul 72, pp 1109-1114

At a pressure of 6 kg/cm^2 in the nitrogen-oxygen mixture (which corresponds to 40 kg/cm^2 in the helium-oxygen) the aO_2 level did not change over the 5-hour period. When the pressure was raised to 20 kg/cm^2 there was a notable drop in the aO_2 level, which could result from either the density of the gas being inspired or the narcotic effect of nitrogen. Further investigation is required to clarify this causality. It can be concluded that increasing the density of the gas being inspired in these mixtures by a factor of six (and eliminating the cooling effect of the helium) does not lead to a drop in the aO_2 level in a rat's quadriceps femoris muscle during a 5-hour exposure.

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1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SOME PSYCHOPHYSIOLOGICAL FEATURES OF THE ACTIVITY OF PILOTS IN DIFFERENT LANDING APPROACHES -U-

AUTHOR--ISAAKYAN, L.S.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 70-72

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AIRCRAFT PILOT, AIRCRAFT LANDING, PSYCHOPHYSIOLOGY, PSYCHOLOGIC STRESS/(U)SU3P AIRCRAFT LANDING SYSTEM, (U)SP50 AIRCRAFT LANDING SYSTEM, (U)PATH IM AIRCRAFT LANDING SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0692 STEP NO--UR/0177/70/000/003/0070/0072

CIRC ACCESSION NO--APO144432

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NO PROOF IS REQUIRED THAT A PILOT, IN LANDING ACCORDING TO A SEMIAUTOMATIC LANDING APPROACH SYSTEM (PATH-1M), EXPERIENCES LESS NEUROEMOTIONAL STRESS THAN IN A LANDING APPROACH ACCORDING TO THE SP-50 SYSTEM. IT ALSO IS ASSUMED THAT THE STRESS IS REDUCED TO A STILL GREATER DEGREE WHEN AN AUTOMATIC SYSTEM (BSU-3P) IS USED. THAT THE NEW LANDING APPROACHES ARE EFFECTIVE MEANS OF REDUCING NEUROEMOTIONAL STRESS CAN BE SUBSTANTIATED IN TWO WAYS: ON THE BASIS OF THEORETICAL ANALYSIS OF THE ACTIVITY OF PILOTS IN EACH OF THE THREE SYSTEMS AND COMPARISON OF THE LEVEL OF NEUROEMOTIONAL STRESS ACCORDING TO A NUMBER OF VEGETATIVE INDICATORS REGISTERED DURING LANDING APPROACH BY THE THREE SYSTEMS.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SOME PSYCHOPHYSIOLOGICAL CHARACTERISTICS OF PILOT ACTIVITY FOR VARIOUS LANDING APPROACH SYSTEMS -U-

AUTHOR--ISAAKYAN, L.S.

COUNTRY OF INFO--USSR

SOURCE--VOENNO-MEDITSINSKII ZHURNAL, MAR. 1970, P. 70-72

DATE PUBLISHED----MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AIRCRAFT PILOT, PSYCHOPHYSIOLOGY, HEART RATE, RESPIRATORY SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/2057 STEP NO--UR/0177/70/000/000/0070/0072

CIRC ACCESSION NO--AP0117300

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY RESULTS OF A COMPARATIVE ANALYSIS OF PILOT ACTIVITY DURING VARIOUS TYPES OF LANDING APPROACHES WITH DIFFERENT INSTRUMENTATION LEVELS. IT IS POINTED OUT THAT THE USUAL SP-50 SYSTEM OF LANDING APPROACH CONTROL IS MORE COMPLEX IN TERMS OF THE PILOT'S INSTRUMENT READING ACTIVITY THAN THE IM SYSTEM AND THE STILL LESS DEMANDING BSU-3P SYSTEM. IT IS FOUND THAT THE AVERAGE HEART BEAT AND RESPIRATION RATES OF PILOTS ARE MARKEDLY LOWER WHEN THE LATTER IS USED, WHILE THERE IS NO SAFELY RECORDED DIFFERENCE BETWEEN THESE RATES FOR THE FORMER TWO SYSTEMS. DATA CONCERNING THE DISTRIBUTION OF THE PILOT'S ATTENTION BETWEEN INDIVIDUAL INSTRUMENTS DURING LANDING APPROACHES ARE ALSO GIVEN.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE EFFECT OF VARIOUS FACTORS ON SURFACE ROUGHNESS IN ELECTROSPARK MACHINING WITH AN UNPROFILED ELECTRODE -U-

AUTHOR--ISAAKYAN, R.A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, P 66

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SURFACE ROUGHNESS, RESEARCH FACILITY, ELECTROSPARK MACHINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1318 STEP NO--UR/0418/70/000/001/0066/0066

CIRC ACCESSION NO--AP0123277

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123277

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN FROM STUDIES CONDUCTED BY THE KARMATORSK SCIENTIFIC RESEARCH, PLANNING, AND TECHNOLOGICAL INSTITUTE OF MACHINE MANUFACTURE (KRAMATORSKIY NIIPTMASH) ON THE EFFECT THAT VARIOUS FACTORS HAVE ON SURFACE ROUGHNESS DURING ELECTROSPARK MACHINING. RECOMMENDATIONS ARE GIVEN WITH THE OBJECTIVE OF REDUCING SURFACE ROUGHNESS DURING MACHINING WITH AN UNPROFILED ELECTRODE.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE OF THE LAMINAR MOTION OF A FLUID IN A CYLINDRICAL TUBE -U-

AUTHOR--ISAAKYAN, S.M.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK ARMIANSKOI SSR, DOKLADY, VOL. 50, NO. 1, 1970, P. 3-10

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LAMINAR FLOW, FLUID FLOW, THIN TUBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0714 STEP NO--UR/0252/70/050/001/0003/0010

CIRC ACCESSION NO--AT0121373

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0121373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF STRUCTURAL CHARACTERISTICS OF THE LAMINAR MOTION OF A FLUID IN A CYLINDRICAL TUBE BY APPLYING A THEOREM, PROVED BY CHETAEV (1946), THAT CONSTANTLY ACTING DISSIPATIVE FORCES DO NOT UPSET THE STABILITY OF AN EQUILIBRIUM IN A FLUID MOTION. AN EXPRESSION IS DERIVED TO DETERMINE THE VELOCITY CIRCULATION IN SUCH FLOWS. THEORETICAL AND EXPERIMENTAL RESULTS INDICATE THAT THE LAMINAR MOTION OF A FLUID IN A CYLINDRICAL TUBE IS PRODUCED BY AN EDDY WHICH IS A MECHANICAL RESULT OF THE RESISTANCE OF THE TUBE WALL TO THE MOTION OF THE FLUID. FACILITY: AKADEMIIA NAUK ARMIANSKOI SSR, INSTITUT ORGANICHESKOI KHIMII, YEREVAN, ARMENIAN SSR.

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USSR

MEYERSON, F. Z., ISABAYEVA, V. A., and IVANSHINA, A. Z., Institute of Normal and Pathological Physiology, Academy of Sciences, USSR

"Increasing the Development Rate and Degree of Retention of the Conditioned Reflexes of Animals Adapted to Altitude Hypoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 4, 1972, pp 982-984

Abstract: The aim of the project was to select the level of high-mountain hypoxia at which initial disturbances in conditioned-reflex activity in mice are minimal or are absent and positive shifts in cortical function during the process of gradual adaptation are expressed to a sufficient degree. The results obtained indicate that adaptation to the continuous action of moderate high-altitude hypoxia is accompanied by a considerable increase in the rate of development and degree of retention of conditioned reflexes by animals of different genetic lines. In an analysis of the mechanism of the phenomenon, two interrelated factors are to be noted. In the process of adaptation to high-altitude hypoxia, a pronounced activation of RNA and protein synthesis develops in the brain. This synthesis can probably result in a change of the stock of enzymes responsible for the synthesis and decomposition of acetylcholine, norepinephrine, serotonin, gamma-aminbutyric acid, and glutaminic acid.
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USSR UDC 612.143+612.275.1

AGADZHANYAN, N. A., ISABAYEVA, V. A., BEBINOV, YE. M., and YELFIMOV, A. I.

"Role of the Arterial Chemoreceptors in Adaptation to High Altitudes"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

Abstract: Experiments were performed on intact and denervated rabbits and rats imported from Moscow (sea level) and marmots at an altitude of 3,200 m to study the part played by the sinocarotid zone in adaptation to a mountain climate. The criterion of acclimatization was the "survival time" at an altitude of 12,000 m (elevation in a pressure chamber at a velocity of 25 m/sec). Tolerance for high altitude did not increase in the intact and denervated rats until after 30 days of acclimatization. The "survival time" at the "altitude" of 12,000 m was significantly longer in the intact rats than in the animals with excised sinocarotid glomera. The results were essentially the same in the experiments with the rabbits. But in the experiments with the marmots, the "survival time" of the intact animals at 12,000 m was 780 sec compared with 1,280 sec for the glomectomized animals. High altitude tolerance was therefore greater in marmots than in the animals living at sea level (rabbits, rats) and a glomectomy caused opposite changes. Whereas high

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AGADZHANYAN, N. A., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

altitude tolerance of the rabbits and rats decreased after denervation of the sinocarotid chemoreceptors, it increased in the marmots. The dynamics of changes in the RBC, prothrombin time, fibrinogen concentration, and other hematological indexes showed the same pattern. For example, the number of RBC and hemoglobin content increased considerably in the glomectomized rabbits (more than in the intact animals) but decreased in the marmots. Thus, the sinocarotid chemoreceptors play a significant role in the process of adaptation to high altitudes.

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USSR

UDC 612.821.2

MEYERSON, F. Z., ISABAYEVA, V. A., IVANSHINA, A. Z., KRUGLIKOV, R. I., and GLUMOV, G. M., Institute of Normal and Pathological Physiology of the USSR Academy of Medical Sciences, Moscow, and Medical Institute of the Ministry of Health Kirgiz SSR

"Conditioned Reflexes in Massive and Expanded Training of Animals of Two Different Genetic Lines in the Process of Adaptation to Altitude Hypoxia"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 21, No 2, 1971, pp 470-477

Abstract: Mice of two genetic lines, BALB/c (I) and C57BL6 (II), were used in experiments to determine the comparative rate of development and degree of preservation of conditioned avoidance and escape reflexes in the process of the animals' adaptation to altitude hypoxia. The methods of massive and expanded development of conditioned reflexes -- the first at 20 second and the latter at 90 second intervals between pairings were used. The control experiments were carried out in Moscow; the experiments themselves, -- 5, 10, 20, and 40 days after the transfer of the animals to the Tuya Ashu mountain pass at an altitude of 3,200 meters. The reflexes were developed by placing the mice into the

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MEYERSON, F. Z., et al, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 21, No 2, 1971, pp 470-477

main stem of a T-shaped labyrinth with passages permitting the animals to run to the illuminated sides of the T, and conducting an electric current to the floor of the area where the mice were initially placed. The degree of reflex preservation was determined by repeating the conditioning process to the initial criterion, and computing the preservation index on the basis of the difference in the number of pairings required to attain this criterion. The investigations established that under hypoxia the rate of the conditioning of both lines of animals by the massive method was substantially retarded in the beginning. In the course of adaptation to hypoxia, however, the rate of reflex development with the use of the massive method accelerated with the mice of line (1) attaining the initial level, and of line (2) considerably exceeding the level prior to that at the time of the arrival in the mountains. The expanded method when used for line (1) retarded and when used for line (2) had little effect on the conditioning rate. The degree of reflex preservation in both lines improved with the adaptation of the animals to hypoxia. It was further established that the mice of line (2) adapted to hypoxia conditions

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MEYERSON, F. Z., et al, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 21, No 2, 1971, pp 470-477

more successfully than did the mice of line (1). The latter, within 20 days after their transfer to the high altitude began to lose weight, their motor activity diminished and their fur began to lose its gloss. They developed a mortality rate of 38 percent as compared with that of five percent of the mice of line (2). The various aspects of the results obtained in the investigations are discussed. The assumption is that the indicated differences between the two genetic lines of mice reflect the difference in their neurodynamic and consolidation processes. Two tables and 28 reference entries accompany the article.

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USSR UDC 612.275.1

MEYERSON, F. Z., [redacted], IVANISHKA, A. Z., KRUGLIKOV, R. I., and GLUMOV, G. M., Institute of Normal and Pathological Physiology, Academy of Sciences USSR, and Kirgiz State Medical Institute, Ministry of Health, Kirgiz SSR

"Formation and Retention of Conditioned Reflexes During Concentrated and Protracted Training of Animals of Two Different Genetic Lines in the Course of Adaptation to High-Altitude Hypoxia"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 4, Jul/Aug 70, pp 38-46

Abstract: Conditioned reflexes of avoidance and escape (from electric shocks) were formed in BALB/c and C57BL6 mice in Moscow (control) and in a mountain locality (3400 m above sea level). Reflexes were established 5, 10, 20, and 40 days after arrival by concentrated training (short intervals of time between presentation of stimuli) and protracted training (long intervals between stimulation). The C57BL6 mice are known to adapt to hypoxia much better than the BALB/c mice. With concentrated training, the adapted C57BL6 mice developed avoidance and escape reflexes three times more rapidly than before exposure to high altitude, whereas the rate of reflex formation in the BALB/c mice remained the same. With protracted training, the C57BL6 mice developed the reflexes just as quickly as or even more quickly than before exposure to the high altitude. The situation

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MEYERSON, F. Z., et al, Sovetskoye Zdravookhraneniye Kirgizii, No 4, Jul/Aug 70, pp 38-46

was the opposite in Moscow. Here it took two to three times as long to form the reflexes in the BALB/c mice as in the C57BL6 mice. The degree of retention of the reflexes increased with increasing adaptation to hypoxia in both genetic lines and with both methods of training.

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ISABEKYAN, N. G.

"Some Problems in the Zero-Moment Theory of Shells Made of an Anisotropic Varimodular Material"

Moscow, Mekhanika Tverdogo Tela, No 3, 1970, pp 22-31

Abstract: Two problems are considered on the basis of the theory of zero-moment shells made of an anisotropic varimodular material: the problem of torsion simultaneously with elongation and the problem of the constrained torsion of a round cylindrical shell made of an anisotropic varimodular material. It is shown that taking account of varimodularity in an anisotropic material can bring about considerable corrections in the stressed state of the shell.

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UDC 621.791.048

USSR

KUZ'MIN, G. S., and DOBRYNIN, V. P., Perm' Polytechnic Institute, and ISACHENKO, V. A., Motor Construction Plant imeni Ya. M. Sverdlov

"Ceramic Flux for Automatic Welding of Nickel with Steel"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 72, pp 59-61

Abstract: High-quality welded joints of nickel with low-carbon MSt.3 steel and Kh18N10T stainless steel can be produced by using a newly developed ceramic flux in connection with the Sv-04Kh19N9 wire. The slag system of this flux provides for good formation of the seam, stable arc burning, and separability of the slag skin. In connection with various fused fluxes, the Sv-04Kh19N9 wire makes it possible to alloy seams with up to 7-12% Cr. Also given are the chemical composition of the seams in welding of nickel with low-carbon MSt.3 steel with the flux and Sv-04Kh19N9 wire and the optimum relations of the components in the charge of the flux. Microstructures of welded seams demonstrate their high quality. Three illustrations, three tables, two bibliographic references.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PECULIARITIES OF TECHNOLOGY OF THE BUTT WELDING OF BIMETALLIC PIPES -U-

AUTHOR-(02)-VAKHTEROV, YU.G., ISACHENKO, V.I.

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